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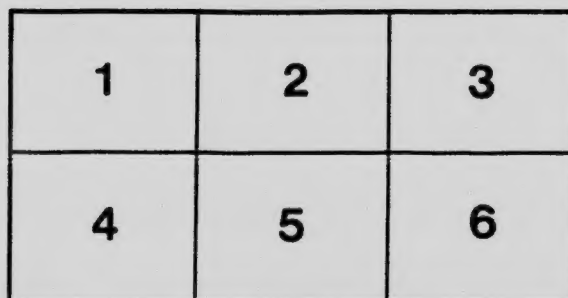
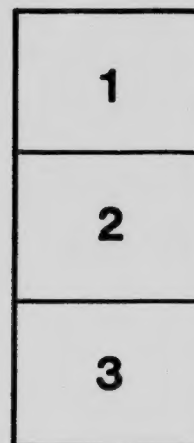
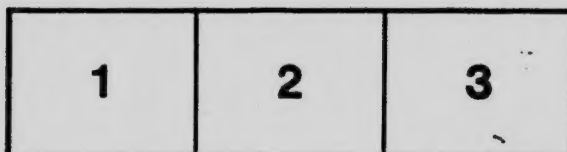
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Ontario Department of Agriculture

DISTRICT REPRESENTATIVES

Farm Poultry and Egg Marketing Conditions

IN ONTARIO COUNTY

BY J. H. HARE AND T. A. BENSON.

INTRODUCTION.

In Circular 140 of the United States Department of Agriculture entitled, "The Egg Trade of the United States," there is reported a loss of 17 per cent., due to the marketing of stale and bad eggs. It is further reported in the "Care of Market Eggs," Bulletin No. 16 of the Dominion Department of Agriculture, that this percentage of loss as reported for the United States is a conservative estimate for that which is sustained in the Canadian trade. Over two hundred Canadian egg dealers advanced that opinion and some would have the figure placed still higher. This means that for every 30 dozen case marketed, there is a loss equal to the value of 5 dozen eggs.

This tremendous toll naturally has a very serious effect upon those concerned with the production and consumption of eggs. By reason of this loss or "shrinkage" the producer is made to accept a lower price for his eggs. Produce dealers are put to the extra expense of employing experts to examine carefully all of their receipts for the purpose of rejecting those that are not fit for food. Where eggs are not examined, as in the case of practically all those that do not go through the hands of large produce dealers, the consumer finds himself paying out his good money for eggs of which upwards of 20 per cent. are badly deteriorated, or perhaps entirely unfit for use. And that is not all. What is still more serious to the industry is that when a consumer has many such experiences he naturally learns to regard eggs with a degree of suspicion. When possible he makes it a point to substitute something else for eggs. In this way the consumption of eggs is very materially curtailed, the demand is lessened, and their reputation as a dependable food product is very seriously impaired.

Another prominent feature of present conditions is the pronounced indifference with which the great majority of people regard the poultry enterprise. It may safely be said that the poultry industry suffers more from unjustifiable neglect than does any other branch of agriculture

And what is still more surprising is that this is particularly true of the farmer himself. There is absolutely no justification for such indifference, not even from a straight financial point of view. By making a fair comparison; that is, taking into consideration the capital and labor involved, the farmer's poultry will yield returns equal to if not greater than any which can be derived from any other branch of his business.

Having some knowledge of these facts, and a special interest in poultry work, the writers of this report some time ago determined, if possible, to find just where the above stated loss in eggs occurred, who was responsible for it, endeavor to increase interest in poultry, at least in Ontario County, and to establish, if possible, some marketing system whereby the heavy loss in eggs might be curtailed or perhaps entirely eliminated.

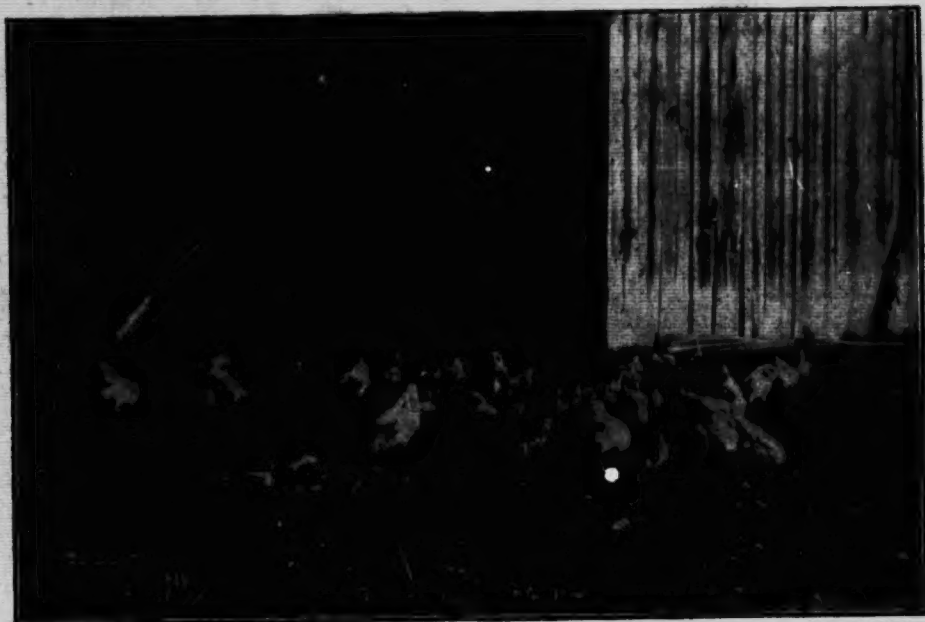


Fig. 1.—A Typical Farm Flock.

To accomplish this, it was deemed necessary, first of all, to obtain more extensive and complete information as to actual conditions under which farm eggs are marketed, following their course carefully from the country producer to the final consumer in the larger town or city. It was also thought necessary to make a careful examination of actual poultry conditions upon a large number of farms. Although this phase of the investigation was confined entirely to Ontario County, there is reason to believe that the conditions in that County are fairly representative of the entire Province. In order to make the investigation of farm conditions unmistakably representative in its character, three different sections of the County were chosen, and in each section a block of farms

selected. All farms in each selected block were investigated. The following form was used in recording the information:

**ONTARIO DEPARTMENT OF AGRICULTURE,
OFFICE OF DISTRICT REPRESENTATIVE, WHITBY.**

FARM POULTRY AND EGG MARKETING INVESTIGATIONS.

Form used for Investigating Conditions on the Farm.

Name of farmer
Address
Date

CHARACTER OF FARM:

Size
Crops raised
Stock kept
Possible accommodation for colony houses

POULTRY ACCOMMODATIONS:

Houses—

Number
Kind
Size
Exposure
Location and drairage
Kind of floor
Floor space per hen
Light
Ventilation
Draughts
General convenience
Roosts, kind
Roosting accommodation
Cleanliness, frequent removal of droppings
Scratching material

Nests—

Kind
Proportionate number
Cleanliness
Location

RUNS OR RANGE—

Character
Drainage
Shade
Cultivation

POULTRY KEPT:

Varieties
Number..... Males..... Females
Breeding
Ages

Quantity produced (a) summer months
 (b) winter months
 Frequency of gathering
 By whom gathered
 In what
 Weight of eggs per dozen

Where
In what temperature
Freedom from contamination
How long kept
Grading
Eggs found in stolen nests
Washing eggs
How marketed
Distance from market
Name and address of person to whom sold
Separation of males from flock out of breeding season
Separation of cockerels from pullets

Drink	
Variety of grain feed	
Grain feeds	
Animal feeds	
Grit	
Shell	
Feeding of chicks and young stock	

TABLE NO. 1, SHOWING ACREAGE AND HEN POPULATION ON 448 ONTARIO COUNTY FARMS.

Section of County	No. of farms investigated	Total acreage	Average size of farms in acres	Total No. of hens	Average No. of hens per farm	Average No. of hens per acre
North....	112	13,211	117.9	7,685	68.6	.58
Centre...	180	21,576	119.8	10,108	56.7	.46
South....	156	16,873	108.1	10,137	64.9	.60
Total....	448	51,660	115.3	27,930	63.4	.55

INVESTIGATION OF FARM POULTRY CONDITIONS.

THE FARMER'S ATTITUDE TOWARD POULTRY.

Particular note was taken in this investigation of the attitude of the farmer towards his poultry. To record this information the following classification was made:

First, "Uninterested Poultrymen," or those farmers who had practically no business interest in their poultry.

Second, those whom, for convenience sake and for the want of a better name, we have designated as "Indifferent Poultrymen."

Third, "Interested Poultrymen," or the more progressive farmers, who gave evidence of having some desire to make the most out of their poultry.

Our findings are as follows:

Uninterested poultrymen	29.4 per cent.
Indifferent poultrymen	32.0 per cent.
Interested poultrymen	38.6 per cent.

It is evident from these figures that almost two-thirds of the producers of our market eggs are either indifferent or entirely uninterested so far as the business management of their poultry is concerned. From such a disclosure it is not difficult to understand or believe the claim which often has been made, that the loss due to the marketing of stale and bad eggs is largely the result, either of indifference or carelessness, and is therefore almost wholly preventable.

TABLE NO. 2.—SHOWING PROPORTION OF LARGE AND SMALL FLOCKS ON 448 ONTARIO COUNTY FARMS.

Section of County	No. of farms investigated	Percent. of farms with less than 60 hens in flock	Percent. of farms with from 60 to 100 hens in flock	Percent. of farms with more than 100 hens in flock
North.....	12	30%	%	20.9%
Centre.....	180	68%	1%	14.3%
South.....	156	56.6%	28.2%	15.2%
Total.....	448	51.5%	31.7%	16.8%

FLOCKS ON MOST FARMS TOO SMALL.

It will be noticed in this table that for the centre section there is recorded a very large proportion of small flocks. As a matter of fact the farmers in this section have had the least success in the production of winter eggs. We may therefore conclude that the size of the flock contributes at least something to the farmer's success with poultry. From observations made in this investigation the rule seems to be, the smaller the flock the less interest there is in poultry. Where flocks are larger,

usually the success attained is greater, and the general conditions are better. A flock of seventy-five and upwards is usually regarded as a commercial enterprise, and of sufficient importance to warrant the necessary time to give it what, in the farmer's estimation, is proper care. Ordinarily small flocks do not receive this attention. They are maintained principally for the convenience of the home, to supply it with eggs and fowl. If there is a surplus, it is sold in any convenient way; perhaps given to the local grocer in trade for groceries and other household necessities, or if sold for cash to a travelling huckster, the housewife is generously awarded the proceeds.

It is generally accepted that in order to manage a farm economically, there should be some provision made for poultry. And since it is also accepted that poultry may be made one of the most profitable, if not the most profitable department of the farm, it stands to reason that the flock should be of a commercial size. For these and other obvious reasons, a farmer should keep a flock of not less than one hundred hens.

AGE TO WHICH HENS ARE KEPT.

In a large number of instances no system of selling off hens which have outlived their usefulness as layers, is practised. It is common knowledge among good poultrymen that a hen becomes less useful as an egg producer as she grows older. Mr. F. C. Elford, in his recent publication entitled "Farm Poultry," says: "Many such experiences have gone to prove that as each year a hen grows older her egg-laying ability decreases 25 per cent." Flocks containing a large proportion of hens, three to five years old, are quite common, and on many farms some hens are kept as long as they will live. For ordinary farm purposes hens older than two years should not be retained. A good plan is to leg-band all pullets. Place the bands on the left leg one year and on the right leg the following year, and so on, alternating each year. In this way there will be no difficulty in identifying the older fowl.

TABLE NO. 3.—SHOWING HOW FLOCKS ARE BREED ON 448 ONTARIO COUNTY FARMS.

Pure Bred Flocks			Crossbred and Mongrel Flocks		
Breed	No. of farms	Percent. of total	Breed predominating	No. of farms	Percent. of total
Barred Plymouth Rock.	53	11.8	Barred Plymouth Rock.	207	46.2
White Wyandotte.....	6	1.3	Black Minorca.....	44	9.8
White Leghorn.....	5	1.1	White Leghorn.....	32	7.1
Silver Grey Dorking....	3	.7	Rhode Island Red.....	26	5.8
Silver Laced Wyandotte	2	.4	Brown Leghorn.....	22	4.9
Buff Orpington.....	1	.2	White Wyandotte.....	14	4.2
			Buff Orpington.....	1	1.8
			Black Spanish.....	5	1.1
			Silver Grey Dorking....	4	.9
			Houdan.....	4	.9
			Silver Spangled Hamburg	3	.7
			White Rock.....	3	.7
			Ancona.....	1	.2
Total.....	70	15.5	Total.....	378	84.8

GENERAL PRACTICE IN BREEDING.

There seems to be prevalent among many farmers the erroneous idea that much crossing of breeds is a helpful practice in the production of a heavy laying strain of fowl. This contention is borne out by the fact that only 15.5 per cent. of the farmers visited keep their flocks pure. (See Table 3.) Certain first crosses may get useful birds if intelligently mated, but for a flock, the chief purpose of which is to produce eggs, the pure-bred bird is unquestionably the more profitable. If the farmer after making one cross always returned to the use of the original breeds, the results would be less serious, but the mistake which is almost universal, so far as those having mongrel flocks are concerned, is to continue using the cross-bred birds for breeding purposes without even the slightest effort at a proper selection. The inevitable result is the reversion to a degenerate and much less useful class of mongrel fowl.

Regular inbreeding without regard to defects or good qualities in the fowl mated is another serious mistake which many farmers make. This indiscriminate breeding invariably results in a lack of size in the offspring, a lack of uniformity in the product, and a general debility of the flock. Such a practice should be strongly condemned.

Still another practice which has a strong influence toward reducing the size of fowl, and indirectly the eggs they produce, is that of breeding from late hatched birds that have not attained their full maturity. In other cases, eggs for hatching have been kept too long before setting, and in places not conducive to the preservation of their freshness. Still other flocks, not properly fed, and compelled to live in unsanitary houses, produce eggs that when hatched, the offspring showed marked evidences of debility and weakness.

Under ordinary circumstances the farmer should choose one of the heavier general purpose breeds, keep the breed absolutely pure, and practice careful selection in choosing those birds from which to breed, instead of taking settings from the general flock as is the common practice.

SERIOUS MISTAKES IN INCUBATION.

As a rule, farmers do not appreciate the importance of the early hatching of chickens. Winter egg production is quite impossible unless pullets have been matured early and considerably before the cold winter weather sets in. To accomplish this early maturity, the chickens—having reference particularly to the heavier breeds—should be hatched before the end of May. It is evident from the following table that a large majority of farmers make the serious mistake of hatching too late in the season.

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TABLE NO. 4.—SHOWING PRACTICE OF FARMERS WITH REFERENCE TO
SPRING HATCHING ON 448 ONTARIO COUNTY FARMS.

Section or County	Number of farms investigated	Percent. of farmers who complete hatching before May 20th	Percent. of farmers who fail to complete hatching before May 20
North	112	12.4%	87.5%
Centre	180	10.1%	89.8%
South	156	27.8%	72.6%
Total	448	16.6%	83.3%

Other errors in this connection that are common with a large proportion of the farmers visited are: The use of eggs produced by unhealthy and mismanaged parent stock; the setting of broody hens in the laying pen where they are constantly subject to noise and disturbance; failure to rid the body of the setting hen from lice and mites; no attempt at having the season's hatches come off at about the same time, in order to have chicks of an even age; and the indiscriminate selection of eggs regardless of size and imperfections. Naturally the hatchability of such eggs, and the livability of chicks hatched therefrom must be greatly reduced. In this, together with a combination of bad conditions resulting in high percentages of infertility, weak germs and mortality, may be found the explanation for the tremendous loss experienced during the incubating and brooding seasons.

ARTIFICIAL METHODS OF INCUBATION AND BROODING.

Artificial incubation and brooding is not general among farmers, as may be seen from a study of Table No. 5. There are several reasons for this, which might be summarized as follows: Low-priced, unreliable incubators, being advertised and sold on easy payment terms; a lack of knowledge of the most rudimentary laws of incubation, such failure being either the result of carelessness or a disposition to discard these instructions for some supposedly better original methods; low-priced brooders—veritable death-traps—a menace to chick life even in the hands of an expert; the feeding of chicks too soon after hatching; the rearing of chicks upon soured or otherwise contaminated land upon which many generations of chicks have been reared and the land having had practically no cultivation during this time. All of these and other preventable errors bring disaster, and result in a sweeping condemnation of artificial methods.

TABLE No. 5.—SHOWING METHODS OF INCUBATION AND BROODING ON
448. ONTARIO COUNTY FARMS.

Section of County	Incubation				Brooding		
	No. of farms in- vestigated	Natural	Artificial	Combina- tion	Natural	Artificial	Combina- tion
North.....	112	102	3	7	103	3	6
Centre.....	180	173	6	1	173	6	1
South.....	156	134	15	7	140	10	6
Total.....	448	409	24	15	416	19	13

METHODS OF FEEDING.

Commencing with the newly hatched chicks various methods of feeding prevail. Many of these might be relied upon to bring success if proper attention were given to other important details. Bread crumbs fed dry, or soaked in either milk or water and squeezed dry, small wheat, oatmeal, cornmeal, and shorts figure prominently as foundation rations. In a fair proportion of instances a moderate amount of care is exercised in the feeding of chicks, but in many cases where chicks begin to die, due to errors previously enumerated, interest is soon lost, the chicks are neglected, and those surviving are compelled to take "pot-luck" with the older birds. Sometimes they forsake their own quarters—usually unsanitary—for the houses occupied by the adult fowl, where evil conditions are perhaps of longer standing, and where the "red mite" holds undisputed sway. It often happens, however, that some of the young birds which have come along fairly well, through fear of the older birds will remain in their original quarters, or take to some outlying shed where development is much more rapid and satisfactory.

The feeding of the adult birds during the summer season is, with a large proportion of the farmers visited, either entirely neglected or done in a very haphazard and irregular manner. The mistaken impression that hens do not require attention in the summer season, seems to prevail very largely. Then, too, the fact that hens will abundantly repay a little extra attention given them during the moulting period, is not, as a rule, considered. The result is that all birds to be kept over winter, enter the cold season in a condition very unfavorable for egg production. For good advice in this connection we cannot do better than quote from Prof. W. R. Graham in his recent bulletin on "Farm Poultry." In reference to the methods of feeding the summer laying stock at the O. A. C., he says: "At the present time our plan of feeding is to scatter whole grain in the litter both morning and evening. The grains used are wheat, barley, oats, and occasionally buckwheat and corn. Green food is supplied in the form of grass, etc., in the runs. Sour milk is given as drink." As to the methods of feeding the winter laying stock the following is written: "Equal parts of wheat, corn and buckwheat are fed both

morning and evening. The morning feed is fed the previous evening after the hens have gone to roost, by sowing it on the litter and then turning the litter over; the straw is now on top and the grain below, and when the hens get up in the morning they start to dig out the grain, and are kept busy all forenoon. At noon we feed mangels, cabbage or clover hay. The night feed consists of the whole grain fed in troughs, and what the birds do not eat is taken up. Rolled oats are kept constantly before the hens in hoppers. Buttermilk only is given as drink."



Fig. 2.—Farm poultry house amid filthy surroundings.

DEARTH OF SCRATCHING MATERIAL.

A very important factor contributing to the general experience of no winter egg production is the lack of exercise. To ensure vigor and health in hens—which conditions are absolutely essential to a maximum egg yield—scratching material must be liberally supplied, and the birds induced to exercise by scattering at least a part of their feed in a dry litter of straw or leaves, which should be from six to ten inches deep. Though there is usually an abundance of scratching material close at hand, it may be said that practically all farmers, either through ignorance or pronounced indifference, fail to attend properly to this simple but very important matter.

UNSANITARY CONDITIONS PROPAGATE DISEASE.

OBJECTIONABLE LOCATIONS.—It is an uncommon thing to find the poultry-house separated from the barnyard by any great distance. In many cases the fowl are allotted a section of the main stock stable or they are given the entire run of an outbuilding situated very close to the barnyard. While there are certain advantages in such a location where the fowl may pick up grain and feed that would otherwise go to waste, there are serious evil effects of this arrangement. In the wet season of the year most barnyards are in a very muddy and dirty condition, and during this time it is difficult to keep eggs clean and attractive in appearance. Moreover, under these conditions, the fowl not only have access to, but are often forced to drink the filthy barnyard drainage water. This greatly facilitates the spread of disease, and in view of that fact it would seem advisable to discourage such a location. The nearby orchard or lane not too far from the buildings is much to be preferred.



Fig. 3.—A typical farm poultry house—light and ventilation entirely inadequate.

HOUSE SANITATION.—The health of the average farm flock is not as a rule well looked after. In a few cases regular and systematic cleaning of the house is observed, but these are the exception rather than the rule. In a very considerable proportion of the poultry houses examined the term "filthy" does not exaggerate the conditions found. The usual practice is to allow the droppings to accumulate for several months before any attempt is made at a proper cleaning. In some instances houses are provided with dropping boards, and where these are neglected the condi-

tion of the roosting pen is often much worse than where there is no dropping board.

The majority of houses are lighted by means of a small all-glass window about four feet from the ground, usually in the south side, but not infrequently in the north, east or west. In some instances no light whatever is provided. The question of ventilation is seldom considered. An occasional opening of the door in the winter season is usually regarded as sufficient to supply the necessary fresh air. In many houses draughts, especially floor draughts, are particularly bad. Such conditions as these contribute very materially to the propagation of disease.



Fig. 4.—A good farm poultry house; (a) cotton screen between the windows; (b) runways; (c) frame covered with cotton for windows.

Note.—By making provision for still more glass and cotton the front of this house could be greatly improved.

TABLE NO. 6.—SHOWING PREVALENCE OF DISEASE ON 448 ONTARIO COUNTY FARMS.

Section of County	Number of farms investigated	Percent. of flocks showing serious disease
North.....	112	21.5%
Centre.....	180	10.5%
South.....	156	15.4%
Total.....	448	15.8%

THE PREVALENCE OF DISEASE.

One of the most surprising discoveries made in this investigation was the high percentage of flocks that were more or less affected with disease. It is difficult to estimate with any degree of accuracy the losses suffered by farmers from this trouble. In some instances flocks were found to

have been so seriously affected that large numbers of the affected birds were entirely lost through illness.

The investigation, in this particular alone, discloses a very deplorable condition of affairs, and points to the imperative need of giving these farmers such education and instruction as will enable them not only to diagnose the important diseases but to treat them intelligently.

INSECT PESTS.

BODY LICE.—It is generally admitted to be a most difficult matter to keep a flock of adult fowl absolutely free from body lice, but given a fair chance, hens in good health will keep them sufficiently under control to prevent causing any serious trouble. There are several different species of lice that infest hens. Of these two are very common and are generally known as body lice. The species, *Menopon pallidum*, is probably the most common, and it is a rare thing to find a farm flock which is not seriously troubled with this pest. They are exceedingly active and may be found on all parts of the body. They often crawl on the hands when handling or plucking fowl. Another important species, *Menopon biserialatum*, is found confined to special regions of the body. Although capable of crawling, it is usual for them to remain stationary, sometimes with the head buried in the skin and the body erect. Body lice breed and spend their life on the body of the fowl. The eggs or nits are laid upon the down feathers about the vent and can often be found there, hanging in clusters. It is estimated that the second generation from a single louse may number 2,500, and a third generation 125,000, and that all of these may be produced within eight weeks. Thus it is that a flock considered to be quite free from lice, is often found to be infested after being neglected for only a few weeks. Exercise, proper feeding, and pure air, all help to keep the birds in a condition unfavorable to the existence of lice. Good sanitation is imperative. It is necessary to provide sunny, well-ventilated houses, in which there is no dampness and no accumulation of droppings. A suitable dust bath should be provided and placed in a sunny part of the house. In this box, earth, or sandy loam should be placed, rather than coal ashes, as the earth is beneficial to the skin of the birds in addition to ridding them of lice. A few handfuls of powdered sulphur will add to the effectiveness of the dust bath. All flocks should be carefully watched and frequently examined for lice, particularly young stock, so much of which is ruined by lice and mites.

RED MITES.—The so-called red mite is undoubtedly the most virulent and aggressive enemy of the farm flock. The natural color of the insect is grey. It is only when gorged with blood, like the mosquito, that it becomes red.

Few farmers appear to realize the enormity of the ravages of these mites, and, having no knowledge of their life history or habits, they are ignorant of the best methods of eradication. Instances of broody hens leaving the nest due to mites are common. The investigators have fre-

quently examined poultry houses, after being told that the flock was absolutely free from all insect pests, and discovered myriads of red mites merely by lifting a roost or nest box. At this the farmer would express the utmost surprise. Without doubt these mites are responsible for a large proportion of prevalent disease. The birds are thereby reduced to a condition which leaves them an easy prey to disease germs. Furthermore, such conditions render the fowl utterly useless as layers of winter eggs. This undoubtedly is the explanation of many flocks failing to lay, even where special efforts are made to obtain eggs during the winter season.

In a recent bulletin (1911) published by the Maine Agricultural Experiment Station, and edited by Messrs. Pearl, Surface, and Curtis, there is given some excellent advice upon methods of prevention and treatment for red mites. It reads as follows:—"Clean, dry, well ventilated houses which get plenty of sunlight, are seldom badly infested. The first step in eradicating or controlling the pest is thoroughly to clean the houses. Remove the droppings and all the old nesting material. Clean, and, when possible, scrub or wash with a stream from the hose, all the perches, nests, floors and walls, with a mixture composed of three parts kerosene and one part crude carbolic acid. Work the mixture into all cracks, crevices and joints of the building.

"With this spray it is necessary to make two or more applications at intervals of a few days to destroy the mites which hatch after the first application. The liquid may be put on with a hand spray pump or with a brush. Cleanliness, fresh air, and sunlight are cheap and effective preventatives."

Another spray successfully used, and which is less expensive is kerosene emulsion. This is made up of kerosene (coal oil), 2 gallons; rain water, 1 gallon; soap, $\frac{1}{2}$ lb. Dissolve the soap in water by slicing and boiling; take from fire, and while hot pour in kerosene and churn vigorously for five minutes. For use dilute with nine parts of water so that the above three gallons of stock emulsion will make thirty gallons of the spray mixture.

According to the following table the examination of poultry houses on 448 Ontario County farms revealed the fact that 75 per cent. of them were more or less seriously infested.

TABLE NO. 7.—SHOWING PREVALENCE OF RED MITES.

Section of County	Number of farms investigated	Percent. of flocks infested
North.....	112	71.4%
Centre.....	180	78.4%
South.....	156	76.5%
Total.....	448	75.4%

CARE OF EGGS UPON THE FARM.

COLLECTING EGGS.—The frequent and regular collection of eggs from the poultry house is not viewed with sufficient importance by the majority of farmers. The usual practice is to gather the eggs but once a day during both winter and summer. While this may suffice at certain times of the year, collections should be made more often during the hatching season when broody hens are continually invading the laying pen. In the hot midsummer weather, and during the colder part of the winter, a similar practice should obtain. If frequent collections are not made during these periods the loss due to frozen, heated and hatched eggs, though not apparent to the farmer, will nevertheless be great.

A general lack of system is also evident on many farms. The responsibility of collecting eggs is seldom allotted to one person. The result is that on some days no collections are made, or, if one is given the work who is not familiar with the location of all the nests, some may be overlooked and left until a day, or perhaps several days, latter. A surprising discovery in this investigation was the fact that 11.8 per cent. of the farmers visited were so uninterested in their poultry that no special provision whatever had been made for nests. In the case of others there were far too few nests for the number of hens kept, and in still others too many, a condition which, in winter, favors the chilling and freezing of eggs. These facts are evident from a study of Table No. 9. It is little wonder that when the product of such farms is candled and graded, there is found a very heavy shrinkage. Few of the above difficulties arise where there is provided one clean, inviting nest for every five hens in the flock.

TABLE NO. 9.—SHOWING RELATION OF NUMBER OF NESTS TO NUMBER OF HENS ON 448 ONTARIO COUNTY FARMS.

No. of farms	Percent. of total	Nests provided "
53	11.8	No special provision for nests
59	13.1	From 2 to 10 nests per 100 birds
145	32.4	From 10 to 20 " " 100 " "
103	22.9	From 20 to 30 " " 100 " "
49	10.9	From 30 to 40 " " 100 " "
20	8.7	From 40 to 46 " " 100 " "

IMPROPER METHODS OF KEEPING EGGS PREPARATORY TO MARKETING.

The mistake of storing eggs in improper places, preparatory to marketing, is common with many farmers. There seems to be a general lack of appreciation of the fact that an egg is a very perishable product. Few realize that the heat of an adjoining room or the odor of some strong-smelling vegetable, is sufficient greatly to reduce the quality of eggs. The source of trouble in many instances is the holding of eggs in a damp cellar, or in a small room or pantry, adjoining a heated kitchen. Eggs should be kept in a cool room free from draught, dampness or any foul odors, and in a temperature not exceeding sixty degrees. Usually such a place may be found in a cool dry cellar or cellar-way.

WASHING EGGS.

Careless, neglectful methods in the poultry house as well as wet and dirty ranges often result in a large proportion of dirty eggs. It is the common practice of some of the most self-respecting farmers or their wives to carefully wash these stained or otherwise soiled eggs. For immediate consumption such eggs are as good as those that are unwashed, but for storage purposes they are not so valuable. This is due to the fact that the soluble portion which serves as a hindrance to evaporation, and a protection against the entrance of organisms of deterioration, is washed from the surface of the shell. Moreover, such a practice is liable to dampen the membrane which is immediately beneath the shell. When this membrane is wet, germs of putrefaction effect an entrance much more readily, thus rendering the egg more subject to contamination.



Fig. 5.—A "found" nest.

MARKETING OF PARTIALLY INCUBATED EGGS.

Unfortunately cases of this dishonest practice are not wanting. It certainly can hardly be claimed that such a practice results from ignorance. The same may be said of marketing eggs from stolen nests, which is an all too common practice, as borne out by the candlers of large city egg dealers. Many of these eggs are found in the fields or in favorite hiding-places about the buildings. While accumulating before discovery, they are probably being subjected to dampness from frequent rains or exposed to the direct rays of the hot sun. Both of these factors cause eggs to deteriorate very rapidly.

REMOVAL OF MALE BIRDS AFTER THE BREEDING SEASON.

It is remarkable how few farmers appreciate the importance of infertility in market eggs. To make provision for the infertility of an egg does not necessarily guarantee the absolute preservation of its good quality; but such an egg, being free of the active germ cell, will not, under ordinary storage conditions, deteriorate seriously. The great bulk of eggs which are spoiled for purposes of consumption are the fertile eggs, which, having been subjected to heat above seventy degrees, undergo partial incubation. If the heat is continuous and strong enough, the development of the chick will continue; but if it ceases or is intermittent, putrefaction at once sets in and the eggs become bad. Such eggs are known to the trade as "blood rings," "floats," "heavy floats," or "rots," depending upon the degree of deterioration they have undergone. Few farmers have any knowledge of these facts, and consequently practically none have made any effort to ensure infertility. They seem to have the erroneous impression that the presence of the male bird is essential to the production of a maximum number of eggs; but it has been proved beyond all question of doubt that such an arrangement is not necessary, and for the reasons set forth, is highly undesirable.

REVIEW OF PRESENT METHODS OF MARKETING EGGS AND CONSEQUENT LOSSES.

THE FLAT RATE SYSTEM AND THE COUNTRY MERCHANT.

The farmer is not the only one accountable for the heavy shrinkage in market eggs. Along the course of trade through which eggs pass, there are other handlers commonly known as "middlemen," with whom should be placed much of the responsibility. This is true because of the system which they invariably employ in the purchase of the farmers' eggs. This system is known as the "case count," or "flat rate" system, and consists of paying one common price for all eggs.

The country merchant, who is usually the first to receive the farmer's eggs, is in the habit of receiving weekly or semi-weekly quotations from large egg dealers, and upon these quotations he bases his price. The evil feature of this system is in the fact that no consideration whatever is given to the question of quality. The farmer who is in the habit of supplying the merchant with an attractive lot of clean and strictly fresh eggs receives no more in price than the farmer whose eggs are small, soiled, stale, or part of which are bad and entirely unfit for consumption. The result is that the farmer is in no way induced to properly care for the product upon the farm. There is also held out to unscrupulous producers the temptation to include in the case prepared for the market, eggs that are known to be of questionable quality. Though the merchant to whom such eggs are sold has absolute knowledge, or, at least, well-founded suspicions, that the eggs brought in by the farmer are not fresh as represented, he usually prefers to accept them without making the slightest complaint. The merchant's policy is to cultivate as large a trade as possible in eggs. He knows that by so doing other departments of his

business will be proportionately increased. As a result he is strongly tempted to bid high for eggs, seeking to outdo his competitors, knowing that if he chances to lose on the eggs he handles he can very easily make the loss good, simply by inflating proportionately the cost of the miscellaneous articles the farmer desires to purchase or take in trade.

Still another practice of some local merchants is to advertise two prices; one a cash price, and the other a trade price, usually about two cents higher than the cash price. If the farmer is determined to have cash he is forced to be satisfied with the lower price. If, on the other hand, he consents to take groceries or other goods in trade for his eggs, he is represented as being paid the higher price. In reality this higher one is not the real price, but a fictitious one which is set by the merchant for no other purpose than to secure the farmer's trade. Upon the account form rendered by the merchant there may be represented goods to the value of the eggs figured out at the higher price, but at the same time the merchant is often careful to increase the cost of the goods taken in trade equal to the advance given for eggs, or in some other way make up the difference.



Fig. 6.—Careless handling of returned egg cases.

Note.—The paper fillers in these egg cases were thoroughly soaked by a drenching rain. This is one of the causes of mouldy and musty eggs.

Another evil of this "case count," or "flat rate" system, is that the innocent suffer with the guilty. Those farmers who are supplying the markets with strictly fresh eggs, and of best quality in other respects as well, suffer from the low price, caused by the presence of inferior eggs supplied by others who are careless, or perhaps dishonest in their dealings. Commission merchants know what shrinkage to count on at certain seasons of the year, and naturally they pay a price which is sufficiently low to cover at least a portion of that shrinkage. And not only does the unoffending farmer suffer by reason of this present antiquated system of marketing eggs, but the equally innocent consumer is at the same time charged a higher price to assist in covering the shrinkage or so-called loss suffered by commission merchants.

THE HUCKSTER.

The travelling egg buyer, commonly known as the huckster, figures very prominently in the egg trade of Ontario. His custom in some sections is to call at the doors of the farm houses and solicit the purchase of the farmer's eggs. In other sections he will establish himself in some convenient central point—usually a small village in the midst of a good trading section—and announce to the farmers in the community that on a certain day he will receive their eggs. As a rule, there is little or no com-



Fig. 7.—Market day in a country town.

petition, and needless to say he buys at his own price. From here he passes on to another point, duplicating the practice on the following day. From the standpoint of quality in eggs received by the larger markets, those received from the huckster generally compare very favorably with those coming from other sources. It is the usual practice of the huckster to make regular weekly collections. Where farmers are in the habit of selling to him regularly, such eggs are fair in quality. But, with this system, the price received by the farmer is usually not so high.

While the huckster, as a rule, makes regular weekly shipments to the larger markets, careless or deliberate holding of eggs is sometimes his practice. In one instance which came under our notice, a large quantity of eggs was left over by a huckster in an ordinary shed for a whole week during the hottest weather experienced in the summer of 1911. His excuse for holding these eggs was that his waggon was overloaded, and that if the eggs were shipped by express or freight, his profit would be too small. However, it is worthy of note that at that particular time the market price for eggs was on the upgrade.



Fig. 8.—Candling and grading eggs.

THE LOCAL MARKET.

In many small country towns, particularly in districts surrounding large consuming centres, there have been established market places which are utilized by farmers on a set day of each week, for the exclusive purpose of selling poultry, eggs and butter to visiting agents of large produce firms. It is often stated in support of the local market that this system is superior to all others, for the reason that there is keen competition between the buyers, and because of this, high prices rule. But the most superficial investigation will give one well founded suspicions that, as a

rule, there is no trace of the avowed competition, but in its stead, an arrangement to pay a certain fixed price. Here, too, all eggs are bought on the "case count" basis.

Though these are the most important methods by which farmers dispose of their eggs, there is still one other that is worthy of notice. A certain proportion of the better and more progressive farmers, in seeking to obtain a higher price for their eggs, pass by one or more middlemen and deal directly with large produce houses, retail stores, or with the final consumer. Such eggs are generally of a higher grade and are acknowledged by those accustomed to receiving them, to be of a better class than eggs marketed in any other way.



Fig. 9.—Spoiling eggs by subjecting them to the direct rays of the hot sun—a common mistake of the retailer.

CANDLING AND GRADING MARKET EGGS.

While by no means all eggs delivered to the larger markets are candled, there is that portion of the trade, handled by the large produce dealers, which is carefully examined and graded. The process of candling consists simply in the examination of the egg in a dark room before an opening in a shield covering a small incandescent light or coal oil lamp. Before such a light, an egg appears comparatively transparent, sufficiently so to enable the expert to determine the extent to which the contents of the egg have evaporated, or the degree to which the egg has deteriorated in quality. The illustration (Fig. 8), which is a flashlight photograph, shows

very clearly the nature of the apparatus used, the candler at work, and also the various grades made of the eggs after examination. This process of course is costly, taking considerable time and expert service, adding not only to the cost of eggs to the consumer, but to the reduction of the farmer's receipts.

However, it is fortunate for the general public, at least of large consuming centres where such establishments are operating, that such eggs are to be had, and that they are subjected to such careful examination. In buying candled eggs consumers may feel comparatively sure that the eggs they are purchasing are as represented.

THE TOWN OR CITY RETAILER.

On the other hand, there is a portion of the trade which comes from the country storekeeper, the huckster, or the farmer, directly to the retail merchant, which, as a rule, is not candled or graded. Consumers in villages and outlying towns are supplied with this class of ungraded eggs almost entirely. Consequently they have to assume the entire risk. This practice undoubtedly results in a great curtailment of consumption, and indirectly loss to the industry. To illustrate the truth of this general statement it may be said that the housewife, in buying bad eggs is so disgusted that the next time when eggs are desired, she determines that something more dependable must be bought. The consequence is, fewer eggs are purchased, the price goes down and the reputation of this commodity is seriously injured.

Nor is the retail merchant always free from blame in the matter of selling deteriorated eggs. Often his zeal for business seemingly overcomes his reason and he apparently forgets, or is ignorant of the fact that eggs take on strong odors in a favorable atmosphere, as in a room where kerosene is stored; that they become mouldy and musty if placed in damp locations; and that they actually hatch into chickens if placed in a suitable temperature. The merchant is often as much in need of education as the farmer.

THE NEED OF EDUCATION.

The poultry industry is in need of a great awakening. The farmer should be aroused and made to see that his poultry is in reality one of the best revenue producing branches of his farm; that there is a distinct place in his business for poultry; that his flock should be made larger and thus put on a better commercial basis; and that he would be abundantly rewarded with better results if he directed the management of his poultry according to the few well established and generally recognized successful methods. He should be made to realize that as a matter of fact, he, and not the middleman, suffers heavily by reason of the loss due to spoiled eggs. Such work as this may be accomplished by the distribution of more educational literature, by more public discussion, by the agricultural press, and through the agency of the Government's agricultural experts.

THE DEMONSTRATION POULTRY HOUSE.

During the past few years a great deal of effective teaching has been done by means of demonstration. One branch of agriculture, namely, fruit-growing, seems to have lent itself very readily to this method. The District Representatives who are located in fruit-growing sections, have taken advantage of this, and by the management of demonstration orchards have wonderfully increased the interest taken by farmers in the proper care and management of their fruit trees. The success achieved along this line suggested to us the possibility of the adoption of the same idea in connection with poultry. Our desire was to work out some means of illustrating to farmers, a good type of poultry house, proper appliances to install in the house, proper methods of feeding, and chief of all, to demonstrate the possibility of winter egg production. In the fall of the past year the house as illustrated by Fig. 10 was built. It was loaned to an energetic and enterprising farmer on condition that the flock it contained be managed and fed according to directions given. The results in winter egg production were excellent. The pullets were not of a bred-to-lay strain, but were early hatched, healthy, vigorous birds from pure-bred stock.



Fig. 10.—Demonstration poultry house.

This scheme was eminently successful in arousing the interest of the farmers in that locality. Everyone had the privilege of making an examination of the house and enquiring as to methods of management, etc. Surprising advantage was taken of this privilege and the effect upon production during the first winter season was very marked.

A BREEDING STATION.

Such a poultry house which has been so effectively used as a Demonstration house may also serve the purpose of what in European countries would be called a Breeding Station. The house should contain well-bred utility hens, that the eggs and offspring therefrom would be of such a character as to effect improvement in the farmer's flock. If the farmer or poultryman who has the management of the station is at all successful in getting good results he should have no difficulty in finding ready sale, at moderate prices, for eggs during the hatching season and for male birds in the fall of the year. This line of work is most essential as a part of a poultry improvement campaign. In fact, one cannot hope to make poultry educational work effective unless there is provided some source from which farmers may secure improved breeding stock.

CO-OPERATION IN THE MARKETING OF EGGS.

The egg trade requires a marketing system, the working or selling principle of which is based upon quality. What is known to the trade as the "loss off" system should be adopted in place of the "case count" system which is now so universal. So long as the latter system prevails, proper and sanitary methods of production and care of this very perishable product will be discouraged. As a matter of fact, the present method amounts practically to the placing of a premium on careless and dilatory methods. By reason of this basis of buying eggs, educational work is rendered difficult if not very largely fruitless. The farmer is repeatedly advised to improve the breeding of his poultry stock in order to weed out the small egg, to keep his poultry house and nests in a clean and inviting condition in order to reduce the number of stale eggs through hens stealing their nests, to gather the eggs twice daily, to keep them stored, preparatory to marketing, in a clean, cool place, and to market them more frequently. To follow this advice is most essential if it is the desire to produce eggs of the highest quality. But it entails some little care which the poultry department of the average farm is not in the habit of receiving. Therefore, when given such advice, the farmer naturally asks this question: "What are we going to get for it?" So long as the "case count" system of marketing continues, the answer which must follow is, "Practically nothing." The system is at fault, therefore the system must necessarily be changed. The price paid for eggs should be based upon the quality of the product at the time of sale. Such a system would, by the encouragement of better methods of caring for and marketing the product, very greatly assist in preventing the heavy loss which the Canadian egg trade now sustains.

The produce of all Co-operative Marketing Associations (which are commonly known as "Egg Circles" where eggs only are handled) is

sold on a quality basis. The members also are paid according to the grade of the product which they supply to the management of the Association. This is one of the leading and most important features of such an organization. The success of the movement has been very largely due to the strict observance of that principle.

The organization of Co-operative Egg Marketing Associations is, therefore, one method of instituting and enforcing the system of buying eggs on a quality basis. Such an organization has also the advantage of cheaper transportation where large quantities of eggs are shipped. In some cases unnecessary middlemen may be eliminated. Such an organization also facilitates more frequent shipment and greater dispatch in placing the product upon the market. Where good management is employed, the members also derive benefit from the expert salesmanship of the manager.

THE MOVEMENT IN ONTARIO COUNTY.

About two years ago a movement was started in Ontario County to establish the co-operative system of selling poultry products. The work commenced with the handling of eggs. Egg Marketing Associations were formed in two of the most promising sections. It was our desire that the farmers should try out the scheme for themselves. If the result showed no improvement over present methods, the matter, of course, could be dropped. On the other hand, if it proved to be a useful and remunerative organization the movement would naturally grow, and that growth being largely spontaneous, progress would therefore be much more satisfactory. Eight organizations have since been formed. According to the last reports the present membership is over 500 farmers. The total membership has increased one hundred per cent. in the past year, and this has been very largely due to farmers voluntarily asking for organizations or for permission to join one or other of the organizations already established. In the case of one organization, No. 7, with headquarters at Cannington, the business has averaged over \$1,000 per month for the past ten months. The movement has made a natural growth, its development being entirely due to the success of those organizations which were first established. In all cases the extension of the movement has taken place in those sections surrounding and in the immediate vicinity of established organizations. This is the best evidence which we can give of what the farmers themselves think of the movement, or of the Co-operative Marketing Association.

The growth and popularity of the movement has been brought about largely because of the increased prices which the members of these organizations have been receiving over and above prevailing local market prices. It is difficult to obtain accurate figures showing the advance in price which members have been getting, because of the influence which the movement has on local market prices; but, to give approximate

figures, the advance in the spring and summer seasons has ranged from one to three cents, and in the fall and winter months from three to as high as twelve cents. This premium which the "marked" eggs from these organizations have been bringing on the near city markets is directly due to an improvement in quality. However, the quality even yet is by no means perfect. A great deal more remains to be done than that which is already accomplished. But the fact remains that some improvement has been made, and because of that improvement, the eggs have commanded a higher price.

Though this increased price is largely responsible for the rapid growth which the movement has made, it must be kept in mind that this is not by any means the only benefit to be derived from a Co-operative Marketing Association. In the writer's estimation, it is the least important. The chief virtue of such an organization is the effect which it has upon the farmer's attitude toward his poultry, and the handling and marketing of eggs. By reason of the better prices and general satisfaction which this system gives, farmers are particularly desirous of remaining with the organization after once having joined. In order to retain his membership the farmer must carefully follow the rules and regulations as outlined in the Constitution and By-laws. In order to do this, he seeks advice and instruction from the management of the organization. In this way the old-time indifferent farmer is changed into a keenly interested one. He becomes remarkably receptive and even looks to the management to guide him in the detailed management of this part of his business. This offers a wonderful opportunity for doing most effective educational work.

The following is a suggested Constitution and By-Laws for a Co-operative Marketing Association.

CONSTITUTION AND BY-LAWS.

CONSTITUTION.

1. The _____ Co-operative Poultry and Egg Marketing Association has for its object the increasing of the profits to poultry raisers by Co-operation.
2. The Association seeks to reach its object:
 - (a) By marketing eggs and poultry of only the best quality.
 - (b) By selling eggs and poultry delivered to its members at the highest possible price.
 - (c) By buying for its members grit, feed, shell, and such other supplies as are needed in the production of poultry.
 - (d) By buying such pure bred stock and eggs as may be needed in improving and supplementing the stock already kept by the members.
 - (e) By the dissemination of poultry knowledge.
3. The annual meeting of the Association shall be held during the first two weeks in January of each year.
4. Notice of the annual meeting shall be given each member by the Secretary not more than one week previous to the date of this meeting.

5. Special meetings may be called at any time upon call of the President, by written notice mailed to each member five days before the meeting. Special meetings shall be called by the President whenever required to do so in writing by any ten members.

6. At the annual meeting a Board of seven Directors shall be elected, of whom four present and voting shall constitute a quorum at any board meeting.

7. The Directors shall be elected for a period of two years except at the time of organization, when four shall be elected for two years and three for one year. In succeeding election all members elected to the Directorate shall be elected for the full period of two years. A retiring member may be re-elected.

8. The officers shall consist of a President, Vice-President, Secretary and two Auditors.

9. The President, Vice-President and Secretary shall be chosen by the Directors from among themselves at the first board meeting after the annual meeting. The Auditors shall be elected at the annual meeting at the time of the election of Directors.

10. The Directors may select three of their number to act as an Executive Committee (the President to serve as Chairman) to have general charge of the affairs of the Association.

11. The President shall preside at all meetings. He shall call meetings of the Board of Directors and members when necessary, and shall advise with and render such assistance to the Manager as may be in his power. In his absence the Vice-President shall have and exercise all rights and powers of the President.

12. The Secretary shall keep a record of the proceedings of all meetings, and of all receipts and disbursements and report the condition of the finances annually or as often as the Directors shall desire.

13. The Board of Directors shall be responsible for the work of the Association. They shall closely supervise the work of the Manager and shall deal with misdemeanors of members. They shall carry on educational work among members of the Association by the distribution of educational literature, and by arranging for educational meetings from time to time.

14. It shall be the duty of the Auditors to examine the accounts of the Association twice during the year (July 1st and January 1st). The July report of the Auditors shall be made to the Board of Directors, and the January report at the general meeting. The Auditors, however, possess the right to examine the accounts whenever they so desire.

15. The Board of Directors shall employ a business Manager who shall also act as Treasurer of the Association. The business Manager shall not be a member of the Board of Directors.

16. When a vacancy shall occur through any cause in any of the offices established by the Constitution and By-laws of the Association, it shall be filled at the next regular or special meeting.

17. The Directors of the Association have full power to expel any member who refuses or neglects to comply with the rules of the Association.

18. All the elections shall be by ballot, plurality electing, conducted by two scrutineers appointed by the Chairman.

19. This Constitution, or any part thereof, may be amended at any regular or special meeting by a two-thirds affirmative vote of the members present.

BY-LAWS.

1. The Manager shall have charge of the affairs of the Association in detail under the direction of the Board of Directors.
2. The remuneration of the Manager shall from time to time be fixed by the Directors, and may be by way of salary or commission.
3. Members of the Association are subjected to the following regulations:
 - (a) They must deliver all eggs not to be used for their own housekeeping or breeding purposes at a time and place determined by the Board of Directors. All eggs must be unbroken, clean, fresh, of good size, and not more than one week old.
 - (b) Before being delivered all eggs must be stamped at the broad end with the stamp supplied by the Board of Directors. The stamp is the property of the Association and must be returned to the Manager when membership ceases.
 - (c) Only false eggs of gypsum, china, etc., may be used as nest eggs.
 - (d) Eggs must be gathered twice a day, and kept in a cool room, free from draught, dampness or any foul odors, and in a temperature not exceeding 60 degrees nor lower than 45 degrees.
 - (e) No member shall be permitted to dispose of eggs through the Association, from other hens than his own.
4. Membership may be obtained by all poultry keepers living in the vicinity of upon payment of an entrance fee of thirty cents. Only those will be admitted who will strive to promote the aims of the Association, and whose applications are accepted by the Board of Directors.
5. Application for membership must be made to the Board of Directors in writing, the application specifying the number of hens which the applicant keeps. Entrance fees must be paid on acceptance by the Board of Directors.
6. An annual membership fee of 25c shall be imposed upon each member at the beginning of each year, the said membership fee to be used for defraying the running expenses of the Association. Where a balance remains at the close of the year it shall be carried over to the following year, and held as a reserve fund. In case membership fee is not sufficient to meet the running expenses of the Association, a special fee may be levied by the Board of Directors, sufficient to meet the liabilities of the Association.
7. In case members do not observe the rules of the Association, a system of fines may be adopted and enforced by the Board of Directors.
8. If the Association should become dissolved, the profits which remain after all debts have been paid, shall be divided among the remaining members. The deposits shall first be paid back, after which any remaining assets shall be distributed among those members who have belonged to the Association at least one year, the said distribution to be made in proportion to the value of the eggs delivered by each member.
9. These by-laws may be amended at any regular or special meeting by a two-thirds affirmative vote of the members present.

It is the experience of the writers what if those in charge of Co-operative Marketing Association formulate a very arbitrary set of rules and stipulate that a violation of the said rules will result in immediate expulsion, the outcome will be disastrous. Some theoretical co-operators may object to this, but we question if any other policy will work out in practice. Strict observance of the rules should, of course, be kept continually before the members as being the secret of success, but it must

be kept in mind that the average farm flock does not as yet command much interest from the farmer, and is not, as a rule, looked upon as a business proposition. It becomes important, therefore, first to enlarge his view of the enterprise; to enable him to see the advantage of the better methods agreed upon by the Association and by means of this education, he will soon develop into a desirable member.

The egg gatherer is usually the manager of the organization. He collects the eggs on a certain day each week, candles and prepares the same for shipment, and delivers them to the shipping station. He also receives the returns for the shipment, reserves his commission, pays the

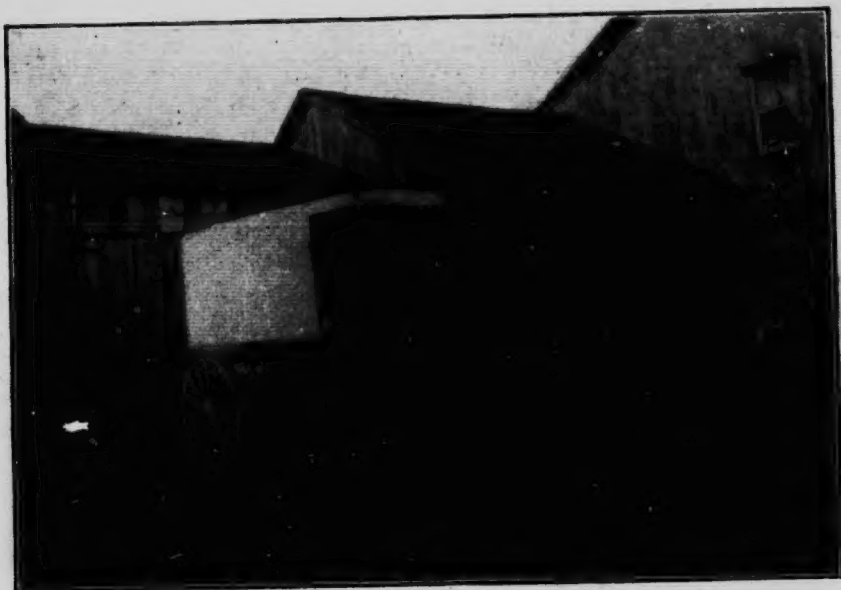


Fig. 11.—Egg collector of an Ontario County Egg Circle.

freight or express charges, places to the credit of the Association Bank Account any fraction of a cent which would make payment to the farmers difficult and with the balance he returns to the members as high a price as possible, of course making deductions where bad or inferior eggs are delivered.

A Poultry and Egg Marketing Association is not unlike a co-operative fruit growers' association. They are alike in this particular, at least, viz., that success depends to a very great extent upon the energy, ability and honesty of the manager employed; and so important is this, that unless an association is able to secure a man of such character, it had better give up the idea altogether, and thus avoid the disappointment of failure.

A FEW CONCRETE CONCLUSIONS.

1. In the investigated district, only 38.6 per cent. of the farmers appeared to be taking a business-like interest in their poultry.

2. The great majority of farm flocks are composed of cross-bred or mongrel fowl. Such indifferent and neglectful methods of breeding as are indicated by the type and quality of birds commonly found on most farms naturally result in a lack of size and uniformity in market eggs and dressed fowl, and an increase in constitutional weakness.

3. Old hens are not profitable egg producers. This fact is not regarded by the majority of farmers.

4. Allowing male birds the freedom of the flock after the breeding season is practised almost universally. The discontinuance of this practice would greatly reduce the shrinkage in market eggs.

5. Hatching too late in the season is one of the greatest of the farmers' mistakes. This is one of the chief reasons for little or no winter egg production.

6. The feeding of farm hens in midsummer is often very seriously neglected.

7. The incomplete ration is another factor contributing to poor winter results. Eggs cannot be manufactured unless all of the necessary constituents are supplied, viz., grain (including whole grain and dry mash), animal food, green food, grit, and oyster shell.

8. Lack of exercise when confined is another important reason for poor results in winter egg production. Scattering the grain in a deep, dry litter of straw will overcome this difficulty.

9. The great majority of farm poultry houses are unsanitary, ill-ventilated and insufficiently lighted.

10. Disease is prevalent to an alarming extent.

11. The Red Mite is the chief enemy of the farm flock. This pest, which is common everywhere, is a potent factor in destroying the usefulness of otherwise productive and profitable flocks.

12. The reason for hens stealing their nests is found usually to be in an uninviting condition of the hen house and nests, or the supply of an insufficient number of nests. Nearly 12 per cent. of the farmers visited have provided no nests whatever.

13. Hatched, mouldy, musty and stale eggs are largely due to eggs being laid away in hidden nests, inattention to broody hens, or to irregularity or infrequency in making egg collections.

14. The perishable nature of an egg is too little understood. Dampness, excessive heat (above 60 degrees), strong odors, draughts, delay in marketing, are factors which very quickly destroy the freshness and good quality of eggs.

15. It is the opinion of the majority of Canadian egg dealers, that the Canadian Egg Trade sustains a loss of at least 17 per cent. This means that for every 30-dozen case marketed, there is a loss equal to the value of five dozen eggs. This loss is very largely the result of defective methods of production and marketing.

16. The chief fault of the present method of marketing eggs is the "case contract" "flat rate" system of buying and selling the product.

17. Eggs should be bought and sold on merit. The price received or paid should be strictly in accord with the quality of the product.

18. To allow as much for inferior eggs as for eggs of the highest quality is practically the same as placing a premium on careless and dilatory methods.

19. The basis of payment of an Egg Selling Association or an Egg Circle is that of quality. Only first-class eggs receive a first-class price. All eggs are paid for according to their grade, as shown by the process of candling.

20. In an Egg Circle, members have the advantages of more frequent marketing, cheaper transportation, the elimination of unnecessary middlemen, access to the latest and best in poultry knowledge, and expert salesmanship, all of which naturally result in the elimination of loss, a higher class product, a keen demand for their product, and larger net profits.